



## Work diary - Nordea Branch Solutions Finland

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<p>This is a work diary that describes ten-week period of summer employment at Nordea Bank AB, Branch Solutions and Customer touchpoints Finland. Author has previous work experience at Nordea during summer 2015.</p> <p>Every week entry is having a brief summary what reader can expect upcoming week and after that more detailed entries and descriptions of different tasks, challenges, experiences and personal thoughts of the week. These week entries are described as much detail as possible, but without forcing the author to have NDA between Nordea and HAAGA-HELIA, that's why some of the tasks are described on a general level. In the end there's a summary of ten-week work period and discussion of the work experience gained during summer 2016 at Nordea.</p>	
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## Table of contents

1	Introduction and the starting situation .....	1
2	Work period in Nordea .....	2
2.1	Week 1 .....	2
2.2	Week 2 .....	4
2.3	Week 3 .....	6
2.4	Week 4 .....	8
2.5	Week 5 .....	10
2.6	Week 6 .....	12
2.7	Week 7 .....	14
2.8	Week 8 .....	16
2.9	Week 9 .....	18
2.10	Week 10.....	21
3	Discussion and conclusion .....	23
4	References.....	25

# **1 Introduction and the starting situation**

This thesis is a work diary type of assignment that will cover a ten-week period during my summer trainee period in Nordea. Each week I will write about my weekly tasks, challenges, experiences and results of my work. After ten weeks I'll summarize everything that I've done and write a conclusion in the end that will conclude my work.

During summer 2016 I will be working at Nordea Bank Ltd. Branch Solutions as a summer trainee. I will be part of one of the scrum teams of Branch Solutions and will be mainly work as a tester, but I will also do different miscellaneous tasks that are assigned for me.

Branch Solutions is a department that is responsible of frontend applications that are used in branches, back offices and contact centers. Branch Solutions main focus is to maintain already existing frontend applications, but also to develop and deliver new applications to fulfil the needs of its customers. The scrum team that I will be part of is focused on loan related applications that are used in Nordea Finland's branches, back offices and contact centers e.g. housing loan tool and credit granting system.

I've been working previously in Nordea previous summer 2015 in a Teller project as a tester, so I already have experience of the ways of working and tools that are used in Nordea.

My expectations from my work period in Nordea as a summer trainee are positive. As mentioned above I've been working in Nordea previous summer and the work tasks were interesting a positively challenging. Nordea encourages working proactively and unprompted which are the ways of working that I appreciate.

## **2 Work period in Nordea**

This chapter starts the diary part of my thesis. Diary is written on a weekly basis during ten weeks and ending by summarizing the work period, experiences and learning outcomes. Weekly chapters include me describing my weekly work tasks, challenges and personal thoughts related to my work. Diary is written in a way that no NDA between Nordea and HAAGA-HELIA is required. Task and assignments that are given for me by Nordea are explained in detail and also as well as possible, but without revealing any customer data or other confidential information that might require signing a NDA between the author and Nordea and/or HAAGA-HELIA.

### **2.1 Week 1**

First week's topics are:

- Housing loan tool introduction and observing Operations using it
- Credit granting system and observing Operations using it
- Automation test platform training
- JIRA issue specification
- User access rights

My very first work day at Nordea started with brief meeting with my superior Teppo, Head of Branch Solutions Finland. We went through the most recent changes in our department, other important information and I got my work laptop, locker and other needed peripherals. Due to some organizational changes Branch Solutions Finland has grown quite a bit since I last was working in Nordea, so in the beginning I'm going to meet lot of new people. Most of my first day was me booking meetings with people, to introduce different systems and software so I could get myself familiar with them. I also booked two half day observation session to Nordea Operations who work with the customer loan applications.

I will be involved with two applications that are under the Branch Solutions Finland, credit granting system and housing loan tool. Credit granting system is an application that is essential in everyday use in Nordea Operations. Credit granting system is a visual basic 6 based application that is used to create, process and grant different kind of customer and company loans, for example Master Cards, housing loans and flex credits. Credit granting system is used in branch offices, back offices and in contact centers.

Pekka and Reija in our department will be the contact persons that I will be working with during the summer. They have extensive experience and knowledge about credit granting system, its features, technical properties and use cases.

Housing loan tool is a web based application that is a supportive tool used by Nordea Operations, to help them to calculate margins, interest collars and total house loans in loan negotiations with customers. There's an extra net version of housing loan tool available for everybody at Nordea web page and also one in Nordea's intranet used by the Operations. Markku in our department will be the contact person that I will be working with during summer.

During the first week I was introduced to automation testing of credit granting system and to new tool, HP UFT which stands for Unified Functional Testing. UFT is an automation test tool that is used to create, manage and execute test scripts.

HP Unified Functional Testing (UFT) software is HP's main automated functional testing tool and incorporates the features of various important legacy products HP Unified Functional Testing QuickTest Professional such as QuickTest Professional, WinRunner, and HP Service Test. UFT automates functional tests by recording the actions of a user on the system under test and replaying the actions on demand to execute a test. The recorded actions are stored in UFT as a simple program known as a script. Scripts can be displayed in UFT either as a Visual Basic Script (VB Script) program (expert view), or as a sequence of steps labelled by icons (keyword view). The tool can test the success or failure of any step with a 'checkpoint', which compares the actual result produced by the system under test at the time of execution, with an expected result stored in UFT at the time of recording.

(Automation Consultants, 2016)

Two of my colleagues are tutoring me how to use the tool and the framework that they have created for the automation testing. Some of the scripts haven't been maintained for a while so the first task that I got was to start going through the test cases and analyzing the code what is the reason behind why the automation scripts don't work. Learning how to use Unified Functional Testing and the logic behind the test cases isn't the hard part, but because programming is not my expertise, understanding automation test scripts is a bit challenging. Thanks to my colleagues and internet, the learning process is easier. During upcoming weeks, I will have more UFT training sessions.

What it comes to ways of working (Wow) in Nordea, we use agile way of working and the everyday agile support tool that we use is Jira. Jira is an agile development tool provided by Atlassian, where teams can plan, track and report software related tasks or issues (JIRA Software 2016).

Every team in Branch Solutions Finland has their own Jira board which provides a sprint specific overview of ongoing tasks. Due to my Jira experience from previous summer I made some suggestions to reporting structure of issues and tasks in our teams Jira board. Those suggestions were discussed with our scrum master and will be brought up in our next retrospective.

First week is now behind and the upcoming work period here in Nordea looks promising and interesting. I'm just getting started and the first week has mostly been introductions to new applications, meeting new people and the most time consuming, getting access rights to every system, application and web service that I'm required have an access. Getting access rights to every system that I need an access won't be over in one week so this will be only mentioned once during my diary.

## **2.2 Week 2**

Second weeks' topics are:

- UFT scripts
- Credit granting systems automation scripts
- HLT testing
- PUTU testing
- Retrospective – Jira task descriptions

Second weeks starts with more training in Unified Functional Testing. My tutors went more into details and explaining basics of creating, executing and maintaining automation test scripts. UFT is used to run user interface (UI) functional and regression testing and it uses VBScript programming language. It works by identifying the objects in the application user interface or a web page and other desired operations. UFT also creates test reports and screen shots after the test case has been run through either passed or failed. Framework that is used in Nordea has a main "control sheet" that is used to configure which test cases user wants to run. Test cases vary from smoke test that runs only the main functionalities of the application to more detailed test cases that have field and button validations.

What comes to the definition of smoke testing, webpage Software testing fundamentals opens up the term.

Smoke Testing, also known as “Build Verification Testing”, is a type of software testing that comprises of a non-exhaustive set of tests that aim at ensuring that the most important functions work. The results of this testing is used to decide if a build is stable enough to proceed with further testing. (Software testing fundamentals, 2016)

As mentioned before, I’m not proficient in programming and 97% of my programming experience that I’ve gained is from school, so at first the amount of information and technical term/concepts was overwhelming but after making notes and self-studying topic from internet things start to make sense little by little.

During this week I’ve executed and analyzed almost 20 test cases of credit granting system automation test cases and made notes what are the possible reasons why certain cases are not executed properly. Some of the test cases are for some reason really slow and other are not executed as expected because of old or wrong test data.

During this week I performed manual test cases that I picked up from our Jira board, related to Housing Loan Tool application (HLT). We have also automated test cases in HLT also, but I haven’t had time yet to look into those. Bugs that I was testing for were mainly related to language changes and one was related to fields that should be disabled when certain values are used in loan application. Fixing the language error wasn’t challenging because we have a tool that is used to create and update text fields, but before looking more into field that should be disabled, I read couple of documents that were related to technical and business based rules that describe how the application should work in whenever certain values are used in different fields. I also did some testing related to PUTU which stands for phone identifier which is used in Nordea Call Centre (CC) to identify and archive the call session and the customer who is calling. Customers can call to CC and for example create a loan application, arrange your investments or plan your future savings. Eight out of nine test cases passed and I reported the result of the test to the developer who started to work with the issue that I’ve found out.

What it comes to bank applications in general, they can be complex and most of them might have lot of business and technical related rules. Also, in banking industry it’s really important to remember that some of the application rules, business or technical, are based on laws and regulations of Finland or Europe. Fundamental functionalities of bank applications are more or less easy to understand, but when going into details you will find out that there’s lot



small legislative details that need to be taken into account when, for example when creating specification document for certain feature of application.

As mentioned in previous week's text, I got involved to plan improvements to our teams Jira task descriptions. I made a proposition that the main points Jira task should include are the following:

- Brief description of the task
  - What is going to be implemented
- Acceptance criteria
- Screen shots and/or attachments

And in case if the user reports a bug to our Jira board:

- Brief description of the issue
  - How issue appears
  - How to reproduce the issue
- Actual (What is happening)
- Expected (How this should work)
- Screen shots or other attachments

We went through my proposition in our teams' retrospective and agreed that this is a good way to start report tasks and issues. Before this there wasn't any standardized way to create new tasks or issues to our Jira board.

### **2.3 Week 3**

Third weeks' topics are:

- UFT training continues
- Biweekly department meetings
- Cash recycler & cash recycler manual
- Jet Form card applications signature specifications

This week started again with more training in Unified Functional Testing. Two of my colleagues who are committed full-time to automation testing are teaching me more advanced topics related to object repository and the framework of Unified Functional Testing platform. We also went through some issues that I've found while executing test scripts. I haven't tried to fix automation test scripts yet because, I don't have extensive knowledge about UFT or any automation testing yet. At this moment I'm the only person who is working on credit granting system automation test scripts, because two of my colleagues that are teaching me have been assigned to different project. After today's training session I've gained some very crucial information related to resolving test script issues. Object repository in UFT is used to store objects. These objects can be for example text fields, buttons, windows, check boxes or other Visual Basic 6 elements. These objects are then used to make the test automation tool to identify different objects and the information that is given to these objects is used to specify the properties of the element. Some of the issues that I've found out in test automation scripts are that the test automation script is not able to find the object which is specified in test script. This can be fixed by checking that the object name property in object repository is same as the one used in script. So far UFT training has been really intensive and challenging and the sheer amount of information is almost overwhelming.

As mentioned in introduction chapter, there been some organizational changes in Branch solutions Finland. Couple of other departments has been merged with Branch solutions Finland creating a bigger and more versatile working unit that has now new knowledge, for example from loans and liabilities area. During this week we had our department biweekly team meeting where we go through different latest news from managerial level, topics that concern our whole department, topics that are suggested by employees and so on.

During this summer I will also be part of maintaining cash recycler. Cash recycler is machine that is used to automate and centralize cash handling in branch offices. Cash recycler is operated from branch employee's personal workstation, where the user can insert a desired amount to the system and the cash recycler gives the cash for the user. Last summer I was also part of the group that was maintaining cash recycler.

One of the bigger assignments that I've got during this summer is a Jet form replacement task. Jet forms are used to create official documents that can be given to customer for example loan and card application forms. These forms are done with software where the user can insert text boxes, signature sections and empty text fields to layout that represents A4 size paper. Most of the fields that are used in application forms are usually filled by the system, by naming the application field and then referring to it in code. Now I've been doing

specifications regarding this task. I've gone through some documentation, contacting out developers and organize a meeting with developers how we will proceed with this task. This task has been so far very demanding. When I started to do this I didn't have any clue how should I proceed with this task. I asked couple of my colleagues where I could read the documentation related to printouts of customer credit granting system and printed couple of demo prints out from the systems to get a better understanding how does the physical copy looks like. After that I started to analyze the material that got and based on the first analysis I started to create specifications for the new application forms. At first glance specification documents look intimidating because, names of the fields are described with their technical names, e.g. 'Family name' – field could be called 'F11' and housing loan could be called '5421'. The reason behind the abbreviations could be that it can be easily comprehensible for the developer to see fields as abbreviations instead of long names. Because of the technicality of the specification documents it took couple of days for me to get hold the way how the specification documents should be done. I reviewed the documents to with Pekka and he gave me a green light to book a meeting with developers. The meeting will be held next week.

## **2.4 Week 4**

Fourth week's topics are:

- New head of Branch Solutions Nordea visiting in Finland
- HLT Admin tool
- Nordea DK automation test demo
- Oili work anniversary
- Jet form continuation

At the beginning of this week, newly appointed head of Branch Solutions Nordea is visiting our department. Head of Branch Solutions Nordea, Kurt, had a meeting with our department where he introduced himself briefly and afterwards introduced some strategical themes and frameworks that will be used in future. AOB, any other business, part of the meeting took a pretty long time because there was lot of questions concerning some organizational changes and also questions related to upcoming frameworks such as SAFE (Scaled Agile Framework). In future Kurt will organize a monthly department meeting where Branch Solutions from Finland, Sweden, Denmark and Norway will participate to discuss common topics.

Along this week I've made some modifications to HLT (housing loan tool) application with HLT Admin tool. HLT Admin tool is a browser based application that is used to modify text keys used in HLT database. These text keys are then used housing loan tool user interface to describe for example names of the fields, buttons or headers. Text keys are in three different languages: Finnish, Swedish and in English. Our business representative sent me an email about some changes that need to be done in test and in production environment. While updating the text keys I found out a bug which was effecting to time stamps created by Admin tool. Every time a text key is changed a time stamp is update to match the current date and time so that it can be seen when the change has been made. I reported the bug to our JIRA board and couple of days afterwards one of our developers started work with it.

On Wednesday, couple of Indian test automation experts had a presentation for our team, about Nordea automation test demo and how it's done in Denmark. It was great to have a demo how our colleagues have implemented the same kind of test automation in Denmark to have a comparison for our own test automation cases. Some of the cases that were run during the demo were really fast compared to our test scripts and later that week I was in contact with automation testers trying to find out why their test cases were faster than ours. It seems that when executing test cases in Java based application the test scripts are run faster compared to visual basic 6 based applications.

This week we had Oili's 35<sup>th</sup> year anniversary working at Nordea. Oili is a senior developer and subject matter expert and originally started working in KOP (Kansallis-Osake-Pankki), an old Finnish commercial bank which was merged as a part of Merita Bank. In 1995 Merita Bank and Nordbanken merged to form Nordea. Most of my colleagues and other senior employees Nordea that I've met during my working period have been working in Nordea for very long period of time, around 20 to 40 years. Most usual starting job position that I've heard is a branch office employee and after spending around 3 to 10 years in branch office they have moved to information technology, product or business related field in Nordea. In my opinion nowadays it's really hard to have such long work career in today's work market in one company. It's impressive that Nordea has been able to offer long term employment periods to its employees in today's challenging job market.

I also had couple of meetings with our developers and with one member of jet form team concerning new jet forms for card applications that I've mentioned in last week's topic. There was some couple of wrong field names and two new forms were required in order to have new jet forms for card applications. I was required to make new specifications for PUTU,

phone identifier fields that are used in call center generated applications. Specifications include unique session identifier, date, time and user id. PUTU information is used to identify customer and make every customer contact unique by creating session identifier. Afterwards phone calls can be replayed by using session id. Some of the PUTU information is shown in customers copy, such as date and time, but user ID and session identifier is only shown in banks copy. So far this PUTU related task has been interesting and little bit challenging because it involves communication between different departments inside Nordea such as business, IT and jet form team.

As I wrote in introduction, Nordea encourages working unprompted and while I've worked with PUTU development it's required to take the initiative to your own hands and start contacting people and organizing tasks and meetings. For me, this kind of way of working is the most efficient way to learn new skills and gain new experience from the work that I do, because I'm more of a "hands-on" learner.

## **2.5 Week 5**

Fifth week topics are

- Test strategy workshop
- Weekly dispatcher
- Test automation resource meeting
- HLT feature testing

This week begun with two-day workshop where Nordea's new test strategy was introduced. Workshop days consisted of different people from Sweden, Norway and Finland talking about their area of responsibility. Topics such as test environments, test deliverable requirements and segregation of duties were introduced during two days of workshops. New changes upcoming changes caused by the new test strategy raised questions and conversation during the workshop. New test strategy incorporates that every deployment needs to go through a similar test environment, test result deliverables have to be same for every product that is delivered to test environment and how segregation duties effect to new test strategy. Segregation of duties is a way to limit access of Nordea employees to production data, long story short developers aren't allowed to access production data. Most of the upcoming changes are beneficial for Nordea's quality assurance because the strategical changes aim to make the testing procedure standardized regardless what kind of application is going to be deployed. Even thou the changes that were introduce in test strategy workshop seem to be rational and fairly easy to implement, the change will take quite a

while to come into effect because organization of Nordea is big and employees are used to certain way of working so it might be challenging in the beginning to start work in a different way even it would be a better way.

Branch solution Finland has 142 applications that are developed and maintained in Finland. Part of maintaining all of the applications, Branch solutions Finland has own email box where users can send email regarding bugs, production errors or anything related to those 142 applications. Every week Branch solutions Finland's common mailbox has a dispatcher who is responsible for delegating the tasks/issues that are sent to the common mailbox to correct subject matter experts or for right the team that can solve the task/issue. I was a dispatcher during this week.

Branch solutions Finland merged with Loan solutions Finland and through that got many new employees, so being a dispatcher and finding out who is the subject matter expert of application that is totally new for me has been challenging. Luckily people in our department are very helpful and tell me the right persons to take care of the incidents that arrive to our common mailbox.

This week I got an invitation to meeting where we would discuss about resources that are needed in maintaining automation tests. Me and my superior Teppo had an automation test resource meeting with couple of participants who were figuring out what kind of automation test resources and how much our department needs. I presented my own findings and our team needs for the automation testing. We discussed also what kind of needs our department in general has regarding automation testing.

Our team, team Initiators, is planning to release new version of housing loan tool (HLT) to pre-production environment within two weeks, therefore I created a test excel sheet based on features and bugs that were reported to JIRA after previous version. Even thou features and bugs that are included in my test excel have already been tested by developers, we need to have test evidence in order to get HLT to pre-production. Test excel consisted of twenty test cases, their results and comments. HLT has automated test cases that are mainly used to test whole flow of the application, so automation test cases are not suitable in this case when a certain feature or bug needs to be tested out. I started manual testing going through the excel sheet and in the end all of the test cases passed successfully. As mentioned in introductory chapter, previous summer I worked in TellerFI project as a tester. During that period, I executed many test cases manually because the nature of the features and bugs were out of the scope of automation testing. This kind of testing is called unit

testing where individual units of code are tested to determine whether they work as expected. Experience from previous summer helps me a lot when executing test cases and I've developed a way of working that is efficient and good for me.

## **2.6 Week 6**

- Two days out of office & Summer vacations period starts
- HLT database problems
- Deploying new credit granting system
- Change request tickets in Remedy
- CAB conference & freeze period
- Adding new text keys to HLT

This week entry might be a bit shorter because I had two days off from work because I attended to martial arts seminar in Helsinki. Also during this week and the upcoming weeks is the period when most of the employees leave on a summer holiday.

There has been an issue in housing loan tool (HLT) when user enters big values to fields. It seems that HLT is unable to insert such long series of numbers to database. In case if user enters moderate or small values to field HLT works as expected and values are saved to database. After investigation the database issue we found out that the length of the column was 7943(VARCHAR). The current length of the column wasn't sufficient for the calculation result that was made in HLT if user used big values. After discussing with developers about possible maximum value that can be used in HLT and when taking into account UI field validations we came up that the column length needs to be increased to 9050(VARCHAR). During the investigation I learned to use software that was totally new for me, IBM Data Studio. At first glance Data Studio looked like that it's going to be hard to learn how to use it, but after couple of hours of trial and error and browsing internet for help, it's rather straight forward to use it. Only experience about databases that I've had before working in Nordea is what I've learned during my studies in HAAGA-HELIA. I think that the course which covers basics of databases and SQL was beneficial for me in this work task because it gave me the basic knowledge about fundamental aspects of databases such as data types, table relationships and running SQL queries.

Our team has been planning to release a new version of credit granting system this week. New version of credit granting system will fix couple of minor bugs that were found out in production and also add a new feature that will add additional checks and calculations when

customer is applying a loan. I haven't been testing features or bugs that will be included in newest version of credit granting system, but other members of our team have been testing out news version with our developers abroad.

Database change and deployment of new software version have to go through Remedy which is change request management system. In Remedy user needs to create a change request ticket where ticket submitter specifies change class, initiative type, change impact, change urgency, change priority, risk level and other essential information that is required for the change to come into effect. If some of the parameters are set high enough, like change urgency or risk level, then an automatic email is sent to head of department asking for approval for the ticket to move forward with higher urgency or approve risk level that is given for the change request ticket. Database column change wasn't urgent, had low risk level and didn't have reason to be prioritized high, but deployment of new version of credit granting system had second highest risk level, change was highly urgent and had significant impact. Reason behind these choices was that the deployment of the new version was delivered to production, meaning that the new version is going to be delivered for everyday use of operations and branch offices. There's also a back out plan that is followed in case of failed deployment or if the version that was deployed has major bug(s) that effects to major flows of the application. Deployment of credit granting support was scheduled during freeze period where the changes need to go through CAB (Change assessment board) meeting, where the change coordinator of the change request presents his/her change, change reason and impact if the change is not implemented. Freeze period is in effect because Brexit might affect to some areas of Nordea operations. Luckily our change is not effected by Brexit. At first presenting the change and reasons behind it in front of around 50 people even thou it was online meeting it felt thrilling. In the end, presenting the change request went well and I got an approval for our change and now we wait that deployment team move the newest version of credit granting system to production.

I got an assignment this week from our product owner of housing loan tool to update, add and delete old sentences from housing loan tool. The sentences included old home insurance offers that can be sold to the customer at the same time when the PBA (private banking advisor) is calculating a housing loan for the customer. As mentioned in week 4 diary entry HLT Admin tool is used to update text field used in HLT. Bug that was mentioned previously has been fixed and the time stamp in HLT Admin tool in working as expected.



## 2.7 Week 7

- Credit granting system production error in production
- CAB conference & freeze period
- Brexit and its effects to our work
- HLT database queries
- HLT pre-production deployment change request
- Weekly dispatcher stand-in

As the new week begun our team got reports from operations that there's an error in production which prevents users to open loan applications that were created before the newest version was released. We quickly started to roll back the previous version which was working as expected and in mean time our developers started to investigate what was the causing the issue, that users cannot open old loan applications. As mentioned in previous week diary entry, deployment ticket included back out plan and previous version of credit granting system was deployed within 30 minutes and operations and branch offices could continue their work. After investigating the issue for a couple days' developers found out what was causing that users couldn't open old applications and started to fix it. At the end of the week we got new fixed version of credit granting system in test where the bug that was found out was fixed and also included new features and bugs fixes which were also included in failed deployment package. I created a change request ticket for the new deployment and when taking lead time into account new deployment was scheduled for next week. Again due to a Brexit freeze period I was required to go through CAB (Change assessment board) meeting, where again change coordinators presented their change requests one by one. This time the CAB was stricter and requested answers to more questions such as, 'what will happen, if the change is not implemented during this period and 'why is it important to do the change during this period'. Luckily our team scrum master and our product owner provided me with necessary information to answer CAB questions and as a result I got an approval for our change request. Attending to CAB meetings and presenting our team change request proved to be thrilling due to a nature of the meeting. After getting this assignment I felt excited to present the change request and afterwards I felt that a little bit of responsibility was given to me as a summer trainee. Meaning that of course I have responsibilities even as a summer trainee, but the CAB presentation felt, at least for me, more challenging and demanding than normal everyday tasks.

During past weeks I've created around five different kinds of Remedy change request tickets and this week wasn't different from previous ones. During this week I've created total of three different kinds of change request tickets. First one was to deploy the fixed version of credit granting system to production which I already explained in previous paragraph. Second one was related to new SQL queries that were required to run to housing loan tool (HLT) test environment database and later to pre-production environment and finally to production. Third one was about deploying existing test version of HLT to pre-production environment. Pre-production environment simulates production environment, but is not actual production environment. By deploying first into "production like" environment Nordea can ensure that the new version will be deployed successfully to production. Deploying to production like environment, to ensure the quality of the package is part of the Nordea test strategy that I talked about briefly during week 5 when I was attending to Nordea test strategy workshop. Luckily freeze period doesn't effect to changes in test environments so second and third ticket went through with ease.

Here's example SQL query that were run into HLT test database. Query is not in its original format; I've changed some of the data so it can be used in this diary. This is a query that inserts text key into Admin tool and sets 'Uusimaa' to its value. HLT supports three different languages and values specified in this query are displayed in Finnish version of housing loan tool. Values 'en' and 'sv' are used if English or Swedish is chosen as application language.

```
INSERT INTO "DB2UT054"."A10LTEXT" (KEY_ID, TEXT, LANG,
START_TIME, USER_ID, TIME_STAMP) VALUES ('hlfibr_txt_apart-
ment_startHome_homeLocation_name_01','Uusimaa','fi','2015-06-05
00:00:00', XXXXXXXX,'2016-06-01 12:39:06');
```

What comes to Brexit and its effects to Nordea, it effects to some departments and operations of Nordea mostly to foreign but also to domestic sector. The topic has been popular in Nordea intra pages and there also has been lot of discussing regarding it. Effect of Brexit is minor to our department, Branch solutions Finland, but I won't be speculating if Brexit really effects to our department because I don't have sufficient knowledge of banks operations that might be effected.

Kari's summer holiday started at the beginning of this week and he was supposed to be weekly dispatcher, so I took his turn. During upcoming weeks, I will be a substitute dispatcher in case if someone else in our department is about leave on holiday, because I don't have any other plans than work whole summer.

## **2.8 Week 8**

- Deploying fixed version of credit granting system
- Nordea test strategy clarification Q&A session
- Housing loan tool & customer management system issue
- Hosting daily scrum meetings

In beginning of this week new version of credit granting system was deployed to production environment successfully. New version fixed bug which prevented users to open loan application that were created before previous version. Now users can open loan applications regardless when it was created. During the week we didn't get any support request tickets to our common mailbox from operations or branch offices that credit granting system is having some problems. The bug that was effecting to previous version wasn't that critical even thou it prevented user to process old applications, it didn't affect to applications that were created after the newest version and so the bug didn't impede operations department or branch users that much.

During week 5 is attended Nordea test strategy workshop where the new test strategy was introduced to IT departments in Finland. After the workshop that was held a month ago, organizers sent an email to participants asking if they had anything that was still unclear and promised to have a Q&A meeting afterwards. Content of Q&A session was almost entirely based on questions sent by participants of test strategy workshop and some of the topics that were presented in test strategy meeting were reviewed in more detail during Q&A session. Session was over after four hours and all question and topics were covered.

I started to investigate an issue that was reported to us some time ago, which was regarding to mail which user from operations sent to us. Housing loan tool, as mentioned before, is used when customer planning to take a house loan. Housing loan tool is used to calculate a tentative housing loan that can be used later during official housing loan negotiations where the loan agreement between customer and bank is done. During the preliminary negotiations where the customer asks for a loan and the PBA (private banking assistant) is using HLT to calculate a tentative loan, result of the negotiations is saved to CMS (customer

management system) under personal information of the customer for later use. The issue that I started to investigate this week was that the user was not able to save the HLT tentative loan agreement to CMS. First I needed access to CMS test environment where I could start to reproduce the bug that was found out. I contacted CMS support team in order to get an access to CMS Finland test environment which is able to communicate with HLT test environment and thus HLT should be able to print loan calculation. It took couple of days for CMS support team to get me access rights to CMS test environment and then I was able to start test the printing issue. Everything went as expected until 'Finishing the calculation' – page where all of the calculations, interest pipes and loan insurances are displayed. This is the page where the user should be able to save the loan calculation to customer management system by clicking 'Save to CMS' – button. When clicking the save button, I got an error message giving a long and incomprehensible text, at least for me, about Java errors and something else. I took a screenshot and wrote a short description text what I've been doing sent them to one of our developers who has been working with HLT. Next day I got an email from our HLT developer saying that HLT is unable to connect to CMS server. CMS team started to figure out is the problem in their end and we started to plan a how can we check that the server is up and running and if there's some connectivity problem between HLT and CMS. We found out that we could make a check to HLT where the HLT checks whether it can find CMS server image and in case if it can't then HLT would give a clear error message that there's a server connectivity issue. We sent the request to CMS support team to send us sufficient information regarding the server image, but we haven't received anything from them during this week.

Half of our team is still on a summer vacation including our scrum master. I was appointed to host daily scrum meetings of our team that are held on Mondays, Wednesdays and on Fridays. During these meetings we go through the following questions:

- What have we done after our previous meeting?
- What will I do today?
- Do you have anything impeding your work?
- Production related support tasks, if any

Each of our team members will answer these questions on their turn. This kind of way is used to share the information about within the team so that everybody will get a common understanding what is currently being worked within the team even thou some of the members of the team could be working abroad. Our team is responsible for two applications and even if the task that you have done or you are about start doesn't concern other half of the

team, it is important for scrum master to know whether you have enough or too much work load and also important for scrum master to know if there's something impeding your work so he/she could help you to clear that impediment. Having daily meeting where team tells about their accomplishments/upcoming tasks/impediments so that team and its scrum master is able to adapt to possible changes. This kind of way of working is in central role in agile way of working.

## **2.9 Week 9**

- UFT license server problems
- Employees returning from summer vacation
- Backlog grooming and sprint planning
- Sprint retrospective
- Specification for participants' foreign currency income
- SMS notification about loan application decision

This week didn't start on a most positive way as it could be. Monday morning, I continued documentation of credit granting system automation test analysis. I booked a meeting for next week where our team could go through the test cases and analysis and decide test cases that are the most critical for our team and then maintain team in future. But my documentation came to sudden halt because my UFT couldn't connect license server for unknown reason. First action that I made was to contact 'Test tools and Methods'- team who is responsible from variety of developing and testing software. They had already received multiple other issue reports describing exactly the same problem. Investigation took almost three days and the reason behind this issue was that the Windows had downloaded latest security update which somehow messed up the connection between UFT clients and license server. After deleting latest Windows update everything reverted back to original state.

During this week most of our departments' employees are coming back from holidays. After holidays it usually takes couple of days for people to read through their emails that they've got during holidays and to catch up with what has happened during their absence. Our team is now back in full strength and we are having backlog grooming, sprint planning and sprint retrospective this week where we are planning what we are about to during August and later in Autumn. Our team with scrum master attends to grooming meetings where we go through issues or tasks that need to be clarified before actual sprint planning session. In sprint planning session there's our team present with scrum master and also our product owner is

attending to sprint planning sessions. Part of the product owner responsibilities is to have a vision of what he or she wishes to build, and convey that vision to the scrum team. During our sprint planning meetings our team and product owner prioritize our backlog and plan the upcoming sprint what tasks we should do and when those tasks need to be delivered. Our product owner is experienced user of our team's software such as customer credit granting system and housing loan tool.

Our whole team, in Finland and abroad, participated to our sprint retrospective where we go through what went well in previous sprint, what went wrong in previous sprint and what could we do differently/how can we improve. Most of our improvement ideas were regarding deployment of new features of housing loan tool to our test environments and how often should we deploy latest features and fixes to our test environments. In the end we came to consensus that we will have weekly deployments to our test environment and our developers will send an email for testers about the deployment and which features/bug fixes were deployed. This way we will have consistent and clear way of deploying to test environment.

I got an assignment from our team member Pekka regarding income tab changes that are required to be done in credit granting system. Couple new fields are required to be added in case if the loan applicants' income is other currency than euro. These kind of small details need to be taken into account when customer is applying for a loan and if he/she is receiving income in foreign currency. Pekka sent me a specification document where business representatives have described their needs for the fields and how they are used in operations and based on that document and with help of Pekka I started to update documents and create JIRA task for developers. This new feature includes two new fields and a drop-down menu. Fields will be used for currency abbreviation and for whole name of the currency and the drop-down menu is used to choose how customer's income has been verified. Business reason behind this feature is to map possible risks of the applicant, who wants to have a loan. Foreign currency, other than euro, needs to be taken into account when processing loan applications; because in case of if the value of foreign currency fluctuates a lot does the customer still have ability to pay back the loan he/she has taken. Specification process of the IT-analyst consists of communicating with the business representatives and product owners who are the ones that give the task for the analyst, creating required specifications documents or updating them with the specifications that were given by the business or product owner and finally overseeing development and testing the finalized feature. When writing a specification document analyst needs to understand business needs and translate them into a technical text which describes business needs on a technical level so that the developers are able to interpret the specifications of the feature. Business sends us their own specifications in format where they describe their needs in combination of layman and

business language. IT-analyst can be called a “middle-man” between business and developers. Even though the new feature is not large, it will take at least this week and next week for the developer to make it till ready for testing status, where I could start testing the foreign currency feature of credit granting system.

I got also a new task during this week and it was a new feature where SMS message would be sent to a customer's phone when Nordea has made a credit decision based on the loan application that customer has done. This new feature uses NMP service which stands for 'Nordea messaging platform' that is used generally in Nordea by different services that require sending automated SMS message. Because I'm working at Branch solutions I'm not aware about technical properties that NPM is using. As in previous task above, I first started the task from gathering information for the specifications. Gathering specifications for this task was a bit more challenging than I originally thought, because I was required to communicate with my team member Pekka who is expert in credit granting system related topics, NMP team which have expertise in SMS related topics and two different business persons who gave me the specifications for the content of the SMS message and the example cases when the SMS message should be sent to the customer. It took me almost whole week to gather all of the required information for this task and organize couple of meetings with every department involved in this task. I also started to create test cases based on the new feature which is currently being development. Creating test cases based on the SMS feature was trickier than I thought because we need to have a working phone number in every case so we can ensure that the message is displayed correctly and that the customer will receive the SMS message. We came into a conclusion where we would use tester's phone number only during the testing phase and then delete it from the test case and in future whoever will test the SMS message feature again should use his or her phone number to the test case.

## 2.10 Week 10

- Analysis and meeting regarding credit granting system automation test cases
- HLT deployment to new environments
- HLT database encoding issues
- 3<sup>rd</sup> level of support
- Full-time job appointment at Nordea

As mentioned during early weeks of this diary, I started to analyze credit granting system automation scripts. I created a scale for test script complexity and integrity. Below you can see the scale which shows how complex and coherent test scripts are. Hierarchy in test scripts goes in this case, on topmost there's test script. Test scripts consist of multiple test cases and test cases consists of multiple test steps. An example test case could be, check layout of application window. Test case then consist of multiple test steps which can be for example, test "OK" – button functionality or verify "Name" – field length.

Complexity	Number of test cases		Integrity	% test cases working
1	1-3		0%	0%
2	4-6		25%	25%
3	7-9		50%	50%
4	10-12		75%	75%
5	+13		100%	100%

The scale above is created as an abstract way to express complexity and integrity of the test case's, it's not a very detailed scale but a scale that gives viewer and common understanding that what is the condition of these test cases. During the meeting we went through my analysis document and based on that wrote down our needs for the further development of our automation test scripts which will be discussed with our department manager.

HLT has been in migration during summer. We've been moving HLT from old environment to new one. This task has mainly consisted of creating tickets for teams that are responsible from environments, for teams that are specialize in databases and for deployment teams. Some of the tasks included to migration are described in previous work diary entries, weeks 4 to 7. New environment is based on newer technology and it consists of two test environ-



ments, pre-production environment and production environment. Environment wise new environment is same as the old environment. We've currently deployed to second test environment and we can expect that we could be in production during October.

During this week I've faced some problems with Scandinavian letter in HLT. As mentioned in one of the first HLT entries, HLT can be used in three different languages, Finnish, Swedish and in English. There have been some issues regarding Scandinavian letter and how they are displayed in application; å ä and ö are replaced with trash characters such as ¶ and ¤. This was after I created SQL and sent them to database team to execute them in pre-production database, because we don't have access rights to pre-production database. I tested SQL that contained those particular queries that started the Scandinavian letter problem in test environments and they worked as they were supposed to, but when they were ran into pre-production database they weren't displayed as expected. I contacted the database team and the person who ran those queries and he reported aback to me that there were no problems when he executed those queries. He said that he would run those queries again and contact me later this week. After couple of days the database guy contacted me and said that I could check are those Scandinavian letters if they would be displayed as expected. Again the letters were shown as trash letters. We started to investigate the issue and in the end we came into a conclusion that the problem behind why Scandinavian letter weren't displayed as expected was because of the encoding in file and in server were different. The file that I created had ISO 8859-15 encoding and so it wasn't compatible with the server encoding that was UTF-8 without BOM. I changed the encoding of the file and after executing the scripts everything started to work again as expected.

Branch solutions Finland consist of subject matter experts who have extensive knowledge of one or two applications that are used in Nordea. When there's a problem or incident in production for example, branch employee contacts IT – service and asks for advice. IT – service tries to help branch employee as much as they can and if the problems still exist or the IT – service employee recognized the problem it will be moved upwards in the line of support. IT – service is considered to be the 1<sup>st</sup> line of support in incident control. 2<sup>nd</sup> line of support consists of IT support people who have more expertise on certain areas and also more access/editing rights to certain systems/applications. When the incident is assigned for the second level of support they try to fix it as best as they can and in a case they are not able fix the existing issue it will be escalated to 3<sup>rd</sup> level which can be for example Branch solutions Finland if the application that is causing the issue is maintained by us. 3<sup>rd</sup> line of support consists of subject matter experts who have extensive knowledge of the application on a business and also on a technical level. Issues that reach on a 3<sup>rd</sup> level will be delivered

to our common mailbox and from where weekly dispatcher will assign them to correct subject matter expert. During the week one of these kinds of issues was assigned to our team, there was an issue in production. It was assigned to our team we started to investigate it. We were able to reproduce the issue in our own environment and we were able to come up with a workaround, but started to work with actual fix that would be released with next version because the issue that was found wasn't critical and didn't interfere with everyday work.

Best news during this week was that I was appointed to full-time employee starting from October. I will continue in same position and in same team because one of our team members is starting his part time pension so I will be starting to take his role little by little. Only thing that I now need to complete is my remaining school work.

### **3 Discussion and conclusion**

As mentioned before I've been working in Nordea previously during summer 2015 and I enjoyed that period of time. This summer wasn't different even thou I was working with different people and in different project. In a nutshell working in a big and international company like Nordea has been a really good experience and has thought me a lot how things and how they are done in work life. School tries to create a base for your upcoming work career offering you knowledge and information about information technology industry, but what I can talk for my behalf working in a real work environment and doing challenging tasks with almost non-existent knowledge has proven to be the most efficient learning method for me personally. I've learned lot of things about agile ways of working, programming frameworks, project management, databases, automation testing and quality assurance. These are just couple of example topics that I've learned during this summer.

First weeks in new job are always a bit confusing; new people, applications, work environment and, more or less, new ways of working. Nordea expects and encourages people to work proactively and unprompted. During first weeks I was given brief introduction what should I start to do and names of contact persons. Based on the initial information that was provided for me I sent a meeting invitations to the contact persons where we could start to plan what the task would include, who should I contact and when the task should be finalized. Also I enjoy these kinds of challenges where I need to find out the answers to questions myself and work proactively. This way of working is not suitable for everyone but for me it is more than suitable.

Work tasks that were assigned for me were interesting and at the same time challenging. I gained good basic knowledge from banks applications, especially loan related applications. During my visit to Operations department I learned how the applications are used on an operational level and the business logic behind them. I'm constantly learning more and more about technical side of loan related applications during my daily work, when I'm testing and creating specifications for new requirements. As I have mentioned before, I will be continue working at Nordea as full-time employee starting from October and one of my upcoming responsibilities will be that I start to gather knowledge and gain experience of customer credit granting system, because one of the Senior IT-analysts of customer credit granting system is leaving on a part-time pension. He has over 20 year of experience about different loan related applications, focusing more on customer credit granting system and little by little I will be taking his role as an IT-analyst.

What comes to constructive feedback for Nordea regarding my work period as a summer employee, it would be good to take into consideration what kind of person is the new employee and how unprompted he/she can work and if the current way of working is beneficial for him/her. Based on that evaluation the ways of working could be modified appropriately.

I'll encourage all students of HAAGA-HELIA to apply as a summer employee to one of the IT-departments of Nordea. The experience has been great so far and if you do you work consistently and with effort it gives you great chances that you could continue your work career in Nordea.

## 4 References

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